1005

PB 209 674

AIR POLLUTION REPORT

FEDERAL FACILITIES

METROPOLITAN MINNEAPOLIS - ST. PAUL INTRASTATE

AIR QUALITY CONTROL REGION

ENVIRONMENTAL PROTECTION AGENCY

Air Pollution Control Office

Reproduced by
NATIONAL TECHNICAL
INFORMATION SERVICE
Springfield, Va. 22151

BIBLIOGRAPHIC DATA SHEET	1. Report No. APTD-1005	2.	3. Recipient's Accession No.
4. Title and Subtitle Air Pollution Report - Federal Facilities Metropolitan Minneapolis - St. Paul Intrastate Air Quality Control Region			5. Report Date February 1971 6.
7. Author(s) Wayne A. Blackard			8. Performing Organization Rept. No.
9. Performing Organization Name and Address ENVIRONMENTAL PROTECTION AGENCY Air Pollution Control Office Division of Abatement, Federal Facilities Branch Rockville, Maryland			10. Project/Task/Work Unit No. 11. Contract/Grant No.
12. Sponsoring Organization Name and Address Same			13. Type of Report & Period Covered 14.

15. Supplementary Notes

16. Abstracts

The status is presented of the Federally owned facilities within the Metropolitan Minneapolis - St. Paul Air Quality Control Region with regard to the implementation of the objectives prescribed by the Clean Air Act, as amended. Fuel usage, refuse disposal practices, air pollution emissions and proposed abatement measures for the listed installations are reported.

17. Key Words and Document Analysis. 17a. Descriptors

Air Pollution
Inventories
Exhaust Emissions
Fuels
Refuse Disposal
Abatement
Urban Areas
National Government
Sulfur Oxides
Nitrogen Oxides
Carbon Monoxide
Particles
Hydrocarbons

17b. Identifiers/Open-Ended Terms

17c. COSATI Field/Group 13 B

18. Availability Statement	19. Security Class (This Report)	21. No. of Pages
Unlimited	UNCLASSIFIED	27
	20. Security Class (This Page) UNCLASSIFIED	22. Price

AIR POLLUTION REPORT

FEDERAL FACILITIES

METROPOLITAN MINNEAPOLIS - ST. PAUL INTRASTATE

AIR QUALITY CONTROL REGION

WAYNE A. BLACKARD

FEDERAL FACILITIES BRANCH
DIVISION OF ABATEMENT
AIR POLLUTION CONTROL OFFICE
ROCKVILLE, MARYLAND

February 1971

TABLE OF CONTENTS

		PAGE
NARRATIVE		1
FIGURE 1.	MAP OF DESIGNATED AIR QUALITY CONTROL REGION	3
TABLE I.	FUEL USAGE AND REFUSE DISPOSAL FOR FEDERAL FACILITIES	4
TABLE II.	ANNUAL FUEL USE BY FEDERAL FACILITIES	17
TABLE III.	FEDERAL CONTRIBUTION TO AIR POLLUTION	18
TABLE IV.	FEDERAL POINT SOURCES	19
TABLE V.	COAL-FIRED BOILERS IN VIOLATION OF 42 CFR 76.4	20
TABLE VI.	ABATEMENT PROGRAM FOR FEDERAL PROBLEM AREAS	21
TABLE VII.	POLLUTANT REDUCTION GOALS	23
REFERENCES AND NOTES		24

NARRATIVE

This report presents the current status of the Federally owned facilities within the Metropolitan Minneapolis - St. Paul Air Quality Control Region with regard to the implementation of the objectives prescribed by the Clean Air Act, as amended. The data in this report are the most recently available and reflect the current fuel usage, refuse disposal practices, air pollution emissions and proposed abatement measures for the listed installations.

I. BOUNDARIES OF THE AIR QUALITY CONTROL REGION

On August 16, 1969, the Metropolitan Minneapolis - St. Paul Intrastate Air Quality Control Region was designated pursuant to section 107(a) of the Clean Air Act, as amended. The seven county intrastate Region is located adjacent to the Minnesota - Wisconsin State border and consists of Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington Counties in the State of Minnesota. A map of this Region is presented in Figure 1.

II. NUMBER OF FEDERAL FACILITIES

There are 75 Federal installations within the Region and of these 28 are involved in burning either fossil fuels or refuse. Table I is a listing of these facilities and the quantities of fuel and refuse burned by each. Table II is a summary of the total annual fuel usage for the respective Counties within the Region.

III. FEDERAL CONTRIBUTIONS TO AIR POLLUTION

The Federal facilities within the Metropolitan Minneapolis - St. Paul Air Quality Control Region emit annually a total of 700 tons of sulfur oxides (SO_x), 370 tons of nitrogen oxides (NO_x), 86 tons of carbon monoxide (CO), 65 tons of particulate (PART) and 19 tons of hydrocarbons (HC) and are summarized in Table III. Emissions from

transportation sources were not included in this report, but will be covered in a subsequent report of air pollution emissions from mobile sources. Identifiable annual aircraft emissions are estimated to total 870 tons of carbon monoxide, 165 tons of hydrocarbons, 50 tons of nitrogen oxides and 20 tons of particulates.

Table IV lists the Federal sources which emit annually more than 100 tons per year (Point Sources) of any one pollutant. There are three point sources in this Region - Navy Reserve Ordnance Plant in Fridley, Veterans Administration Hospital in Minneapolis and the Twin Cities Army Ammunition Plant in New Brighton.

IV. REMEDIAL ABATEMENT MEASURES PROPOSED

Eight Federal facilities, listed in Table VI, reported air pollution problems and/or proposed remedial measures in their 1967-1972 five year abatement plans. These actions and the expected reductions in the air pollution emissions produced by these facilities when all of the abatement plans have been put into effect are presented by Table VII.

FIGURE 1

METROPOLITAN MINNEAPOLIS - ST. PAUL INTRASTATE

AIR QUALITY CONTROL REGION

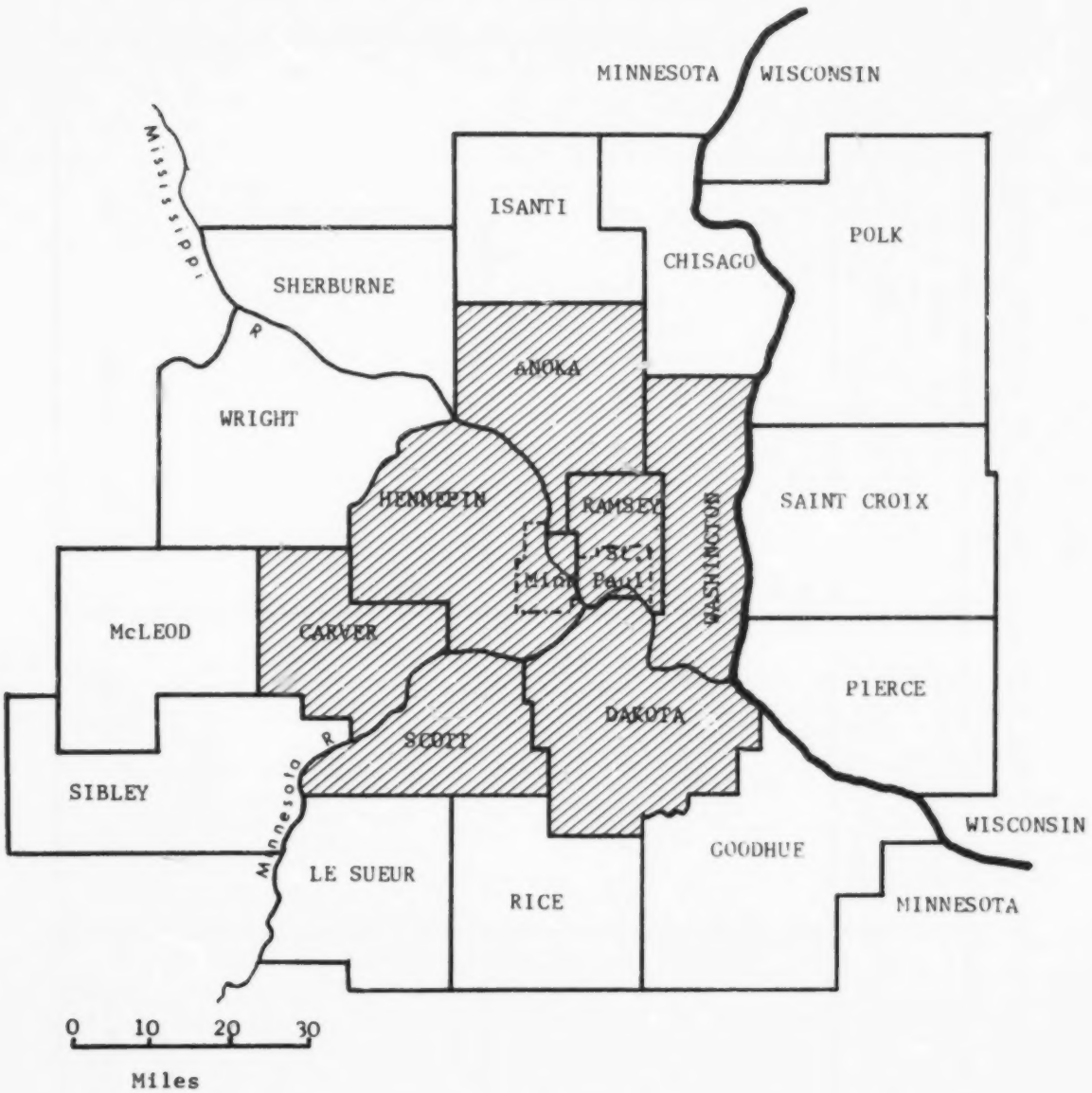

TABLE I

FUEL USAGE AND REFUSE DISPOSAL FOR FEDERAL FACILITIES

LOCATIONS	REFUSE (LBS/DAY)		FUELS (PER YEAR)				COMMENTS
	OPEN BURNING	INCIN-ERATION	GAS (MCF)	DIST OIL (GALS)	RESID OIL (GALS)	COAL (TONS)	
MINNESOTA ANOKA ANOKA							
POST OFFICE ANOKA	0	0	0	0	0	72	REFUSE COLLECTED
MINNESOTA ANOKA FRIDLEY							
IND RESERVE ORD PLANT	0	0	284206	0	1567281	0	
MINNESOTA CARVER							
	0	0	0	0	0	0	NO INSTAL IN THIS COUNTY
MINNESOTA DAKOTA FARMINGTON							
AIR TRAFFIC CONTROL CTR	0	60	17196	14000	0	0	SULFUR EST

TABLE I

FUEL USAGE AND REFUSE DISPOSAL FOR FEDERAL FACILITIES

LOCATIONS	REFUSE (LBS/DAY)		FUELS (PER YEAR)				COMMENTS
	OPEN BURNING	INCIN-ERATION	GAS (MCF)	DIST OIL (GALS)	RESID OIL (GALS)	COAL (TONS)	
FAA-VOR 15344	0	0	0	0	0	0	RANGE/DIRECT AID
MINNESOTA DAKOTA HASTINGS							
POST OFFICE HASTINGS	0	0	951	0	0	0	REFUSE COLLECTED
MINNESOTA DAKOTA MENDOTA							
FAA-H 16114	0	0	0	0	0	0	HOMING BEACON
MISS RIVER L/D 2	0	0	0	7200	0	0	SULFUR EST
MINNESOTA DAKOTA ROSEMOUNT							
AGRIC ENGR RESEARCH ST	0	0	0	0	0	0	ALL SERVICES FURNISHED

TABLE I

FUEL USAGE AND REFUSE DISPOSAL FOR FEDERAL FACILITIES

LOCATIONS	REFUSE (LBS/DAY)		FUELS (PER YEAR)				COMMENTS
	OPEN BURNING	INCIN-ERATION	GAS (MCF)	DIST OIL (GALS)	RESID OIL (GALS)	COAL (TONS)	
FAA-ARSR 16145	0	0	0	0	0	0	LONG RANGE RADAR
FAA-RCAG 16259	0	0	0	0	0	0	VHF RADIO EQUIPMENT
MINNESOTA DAKOTA SO. ST. PAUL							
POST OFFICE SO ST PAUL	0	0	2285	3533	0	0	REFUSE COLLECTED
FAA-OM 16380	0	0	0	0	0	0	OUTER MARKER
MINNESOTA DAKOTA NO CITY ID							
ASTRONAUTICS GROUP	0	100	0	750	0	0	ALSO BURNS LP GAS
ARMY NIKE 40	0	0	0	47456	0	0	SULFUR EST

TABLE I

FUEL USAGE AND REFUSE DISPOSAL FOR FEDERAL FACILITIES

LOCATIONS	REFUSE (LBS/DAY)		FUELS (PER YEAR)				COMMENTS
	OPEN BURNING	INCIN-ERATION	GAS (MCF)	DIST OIL (GALS)	RESID OIL (GALS)	COAL (TONS)	
MINNESOTA HENNEPIN BLOOMINGTON							
FAA-OM 16379	0	0	0	0	0	0	OUTER MARKER
MINNESOTA HENNEPIN CRYSTAL							
FAA-RT 16333	0	0	0	0	0	0	TRANSMITTER/ RECEIVER
MINNESOTA HENNEPIN FT SNELLING							
NAVY RESERVE CENTER	0	0	11186	0	0	0	
FT SNELLING NAT CEMETERY	10	0	2309	0	0	0	REFUSE EST
MINNESOTA HENNEPIN HOPKINS							
POST OFFICE 14 9TH AVE	0	0	0	0	0	0	NOT OCCUPIED

TABLE I

FUEL USAGE AND REFUSE DISPOSAL FOR FEDERAL FACILITIES

LOCATIONS	REFUSE (LBS/DAY)		FUELS (PER YEAR)				COMMENTS
	OPEN BURNING	INCIN-ERATION	GAS (MCF)	DIST OIL (GALS)	RESID OIL (GALS)	COAL (TONS)	
FAA-VOR 16331	0	0	0	0	0	0	RANGE/DIRECT AID
FAA-RTR 16334	0	0	0	0	0	0	TRANSMITTER/ RECEIVER
MINNESOTA HENNEPIN MINNEAPOLIS							
NAVY AIR STATION	0	0	16762	0	0	0	MAIN FAC CLOSED
MINN-ST PAUL INT AIRPORT	0	0	31295	80450	324000	0	
AF SMALL ARMS RANGE	0	0	0	0	0	0	NO BUILDINGS
AIR FORCE SERVICE CLUB	0	0	0	0	0	0	NO HEATING

TABLE I

FUEL USAGE AND REFUSE DISPOSAL FOR FEDERAL FACILITIES

LOCATIONS	REFUSE (LBS/DAY)		FUELS (PER YEAR)				COMMENTS
	OPEN BURNING	INCIN-ERATION	GAS (MCF)	DIST OIL (GALS)	RESID OIL (GALS)	COAL (TONS)	
BUR OF MINES RESEARCH CTR	0	82	14706	15236	0	0	
POST OFFICE	0	1000	39565	0	0	0	REFUSE EST
VA HOSPITAL	0	10842	215608	11380	554168	0	
BUZZA BLDG 1006 W LAKE	0	0	48	84000	0	0	
FED OFF BLDG 210 3 RD AVE	0	0	36	105000	0	0	
FEDERAL BLDG SO 4 TH ST	0	1	30	63000	0	0	
SOCIAL SECUR BLDG	0	0	15	0	0	0	

TABLE I

FUEL USAGE AND REFUSE DISPOSAL FOR FEDERAL FACILITIES

LOCATIONS	REFUSE (LBS/DAY)		FUELS (PER YEAR)				COMMENTS
	OPEN BURNING	INCIN-ERATION	GAS (MCF)	DIST OIL (GALS)	RESID OIL (GALS)	COAL (TONS)	
FEDERAL BLDG FT SNELLING	0	0	52740	0	171407	0	REFUSE COLLECTED
FAA-VASI 16347	0	0	0	0	0	0	LANDING LIGHTS
FAA-ASR 16348	0	0	0	0	0	0	AIRPORT RADAR
FAA-ALSF 16349	0	0	0	0	0	0	APPROACH LIGHT SYSTEM
FAA-ASR 16350	0	0	0	0	0	0	AIRPORT RADAR
FAA-PAR 16353	0	0	0	0	0	0	APPROACH RADAR
FAA-GS 16373	0	0	0	0	0	0	VERTICAL NAV AID

TABLE I

FUEL USAGE AND REFUSE DISPOSAL FOR FEDERAL FACILITIES

LOCATIONS	REFUSE (LBS/DAY)		FUELS (PER YEAR)				COMMENTS
	OPEN BURNING	INCIN-ERATION	GAS (MCF)	DIST OIL (GALS)	RESID OIL (GALS)	COAL (TONS)	
FAA-GS 16374	0	0	0	0	0	0	VERTICAL NAV AID
FAA-LOC 16375	0	0	0	0	0	0	HORIZONTAL NAV AID
FAA-LOC 16376	0	0	0	0	0	0	HORIZONTAL NAV AID
FAA-MM 16377	0	0	0	0	0	0	MIDDLE MARKER
FAA-MM 16378	0	0	0	0	0	0	MIDDLE MARKER
FAA-RTR 16381	0	0	0	0	0	0	TRANSMITTER/ RECEIVER
FAA-RTR 16382	0	0	0	0	0	0	TRANSMITTER/ RECEIVER

TABLE I

FUEL USAGE AND REFUSE DISPOSAL FOR FEDERAL FACILITIES

LOCATIONS	REFUSE (LBS/DAY)		FUELS (PER YEAR)				COMMENTS
	OPEN BURNING	INCIN-ERATION	GAS (MCF)	DIST OIL (GALS)	RESID OIL (GALS)	COAL (TONS)	
FAA-DMEG 16383	0	0	0	0	0	0	DISTANCE MEAS DEVICE
FAA-RCAG 16384	0	0	0	0	0	0	VHF RADIO EQUIPMENT
FAA-RVR 16400	0	0	0	0	0	0	RUNWAY VISUAL RANGE
FAA-RVR 16401	0	0	0	0	0	0	RUNWAY VISUAL RANGE
FAA-UVDF 16409	0	0	0	0	0	0	DIRECTIONAL LOCATOR
ST ANTHONY FALLS L/D	0	0	0	0	0	0	ELECTRIC HEAT
MINNESOTA HENNEPIN OSSEC							
FAA-VTAC 13332	0	0	0	0	0	0	RANGE/DIRECT AID

TABLE I

FUEL USAGE AND REFUSE DISPOSAL FOR FEDERAL FACILITIES

LOCATIONS	REFUSE (LBS/DAY)		FUELS (PER YEAR)				COMMENTS
	OPEN BURNING	INCIN-ERATION	GAS (MCF)	DIST OIL (GALS)	RESID OIL (GALS)	COAL (TONS)	
MINNESOTA HENNEPIN WAYZATA							
POST OFFICE	0	0	936	0	0	0	REFUSE COLLECTED
MINNESOTA HENNEPIN NO CITY ID							
ARMY RESERVE CENTER	0	0	1211	12522	0	0	SULFUR EST
NIKE SITE 70	0	0	0	47460	0	0	SULFUR EST
MISS RIVER L/D 2	0	0	0	0	0	0	LP GAS HEAT
MINNESOTA RAMSEY NEW BRIGHTON							
TWIN CITIES ARMY AMMO PL	0	0	704000	3509000	0	0	

TABLE I

FUEL USAGE AND REFUSE DISPOSAL FOR FEDERAL FACILITIES

LOCATIONS	REFUSE (LBS/DAY)		FUELS (PER YEAR)				COMMENTS
	OPEN BURNING	INCIN-ERATION	GAS (MCF)	DIST OIL (GALS)	RESID OIL (GALS)	COAL (TONS)	
MINNESOTA RAMSEY NO ST PAUL							
POST OFFICE	0	0	1608	0	0	0	REFUSE COLLECTED
MINNESOTA RAMSEY ST PAUL							
AGRIC CROPS RESEARCH ST	0	0	0	0	0	0	ALL SERVICES FURNISHED
NAVY UNIVAC DIVISION	0	40	20100	54000	0	0	
RESEARCH OFFICE ONR	0	0	0	0	0	0	UTILITIES FURNISHED
NAVY RESERVE TRAINING CTR	0	0	0	0	0	0	
POST OFFICE WHITE BEAR	0	0	850	0	0	0	REFUSE COLLECTED

TABLE I

FUEL USAGE AND REFUSE DISPOSAL FOR FEDERAL FACILITIES

LOCATIONS	REFUSE (LBS/DAY)		FUELS (PER YEAR)				COMMENTS
	OPEN BURNING	INCIN-ERATION	GAS (MCF)	DIST OIL (GALS)	RESID OIL (GALS)	COAL (TONS)	
FED COURTS BLDG ST PAUL	0	0	0	0	0	0	PURCHASE STEAM
PO & CUSTOM HOUSE	0	200	104468	343968	0	0	
FEDERAL BLDG 4 TH ST	0	0	0	0	0	0	PURCHASE STEAM
FAA-RTR 16351	0	0	0	0	0	0	TRANSMITTER/ RECEIVER
FAA-ATCT 16352	0	0	0	0	0	0	AIR TRAFFIC CONTROL TWR
MINNESOTA RAMSEY NO CITY ID							
NORTH CENTRL EXP STATION	0	0	0	0	0	0	PURCHASE STEAM

TABLE I

FUEL USAGE AND REFUSE DISPOSAL FOR FEDERAL FACILITIES

LOCATIONS	REFUSE (LBS/DAY)		FUELS (PER YEAR)				COMMENTS
	OPEN BURNING	INCIN-ERATION	GAS (MCF)	DIST OIL (GALS)	RESID OIL (GALS)	COAL (TONS)	
MINNESOTA SCOTT SAVAGE							
MISS RIVER CHANNEL IMP	0	0	0	0	0	0	NO FUEL BURN
MINNESOTA WASHINGTON NEWPORT							
FAA-VOR 16343	0	0	0	0	0	0	RANGE/DIRECT AID
MINNESOTA WASHINGTON STILLWATER							
POST OFFICE MYRTLE & 2ND	0	0	0	0	0	0	BLDG NOT OCCUPIED
MINNESOTA WASHINGTON NO CITY ID							
ST CROIX LOCK SITE	0	0	0	0	0	0	LAND SITE

TABLE II

ANNUAL FUEL USE BY FEDERAL FACILITIES

	COAL (TONS)	RESID OIL (GAL)	DIST OIL (GAL)	GAS (MCF)
MINNESOTA				
ANOKA	72	1567281	0	284206
CARVER	0	0	0	0
DAKOTA	0	0	72939	20432
HENNEPIN	0	1049575	419048	386447
RAMSEY	0	0	3906968	831026
SCOTT	0	0	0	0
WASHINGTON	0	0	0	0
TOTAL	72	2616856	4398955	1522111

TABLE III

FEDERAL CONTRIBUTION TO AIR POLLUTION
(TONS/YEAR)

	SOX	NOX	CO	PART	HC
MINNESOTA					
ANOKA	310	26	3	10	3
CARVER	0	0	0	0	0
DAKOTA	7	2	1	1	0
HENNEPIN	220	66	36	18	8
RAMSEY	170	280	46	36	8
SCOTT	0	0	0	0	0
WASHINGTON	0	0	0	0	0
STATE TOTAL	700	370	86	65	19

NOTE: (1) EMISSIONS REPORTED IN SIGNIFICANT FIGURES
(2) EMISSIONS LESS THAN 0.5 TONS/YR REPORTED AS ZERO

TABLE IV

FEDERAL POINT SOURCES
(TONS/YEAR)

	SOX	NOX	CO	PART	HC
MINNESOTA					
ANOKA					
IND RESERVE ORD PLANT	310	26	2	9	2
HENNEPIN					
VA HOSPITAL	120	42	32	11	1
RAMSEY					
TWIN CITIES ARMY AMMO PL	140	270	5	28	7

NOTE: (1) A POINT SOURCE IS AN INSTALLATION WHICH EMITS OVER 100 TONS/YEAR OF ONE OR MORE OF THE FIVE POLLUTANTS
(2) EMISSIONS REPORTED IN SIGNIFICANT FIGURES

TABLE V

COAL-FIRED BOILERS IN VIOLATION OF 42 CFR 76.4

INSTALLATION NAME	BOILER SIZE (MMBTU/HR)	NUMBER OF BOILERS	COAL USED (TONS/YEAR)	PART. (LBS/MMBTU) EMITTED	PART. (LBS/MMBTU) ALLOWED	PART. EMITTED TONS/YR/BOILER
POST OFFICE ANOKA	1.0	1	72	0.76	0.60	0.7

NOTE: This unit was recently converted to gas as proposed in their five year abatement plan.

TABLE VI

ABATEMENT PROGRAM FOR FEDERAL PROBLEM AREAS

IN THE

METROPOLITAN MINNEAPOLIS - ST. PAUL INTRASTATE

AIR QUALITY CONTROL REGION

A. Statement of problem
B. Abatement measures proposed in five year plan*
C. Abatement measures accomplished or in progress

MINNESOTA

ANOKA

ANOKA

Post Office

A. coal-fired boilers
B. scheduled conversion of coal units to gas
C. construction completed

HENNEPIN

FORT SNELLING

Army Reserve Center

A. one central gas/oil heating plant
B. installation of smoke detectors and the conversion to a low sulfur standby oil
C. construction completed 12/70

MINNEAPOLIS

Post Office

A. coal-fired boilers
B. conversion of coal-units to gas
C. conversion completed

MINNEAPOLIS (continued)

Federal Building (Fort Snelling)

A. excessive smoke emissions from heating plant
B. equipment alterations
C. construction scheduled during 1971

Minneapolis-St. Paul International Airport

A. oil-fired boilers
B. proposed gas conversion
C. units converted to gas with oil standby

VA Hospital

A. single chamber incinerators
B. proposed construction of a new incinerator and modify the existing unit
C. construction scheduled during 1971

RAMSEY

NEW BRIGHTON

Twin Cities Army Ammunition Plant

(1) A. underground gasoline storage tanks
B. installation of submerged inlets
C. construction completed 1969

(2) A. boilers fired with high sulfur oil
B. proposed low sulfur oil conversion
C. conversion completed 12/70

ST. PAUL

Post Office and Custom House

A. single chamber incinerator
B. proposed installation of air pollution controls
C. construction scheduled during 1971

*1967-72 plan per Executive Order 11282,
superseded by Executive Order 11507

TABLE VII

POLLUTANT REDUCTION GOALS
(TONS/YEAR)

	SOX	NOX	CO	PART	HC
MINNESOTA					
ANOKA	3	neg	2	1	neg
CARVER	-	-	--	-	--
DAKOTA	-	-	--	-	--
HENNEPIN	1	neg	24	3	neg
RAMSEY	neg	neg	1	neg	neg
SCOTT	-	-	--	-	--
WASHINGTON	-	-	--	-	--
STATE TOTAL	4	neg	27	4	neg

NOTE: THESE REDUCTIONS WILL RESULT FROM ABATEMENT MEASURES PROPOSED, BUT NOT YET ACCOMPLISHED, IN THE FIVE-YEAR PLAN.

REFERENCES AND NOTES

1. Duprey, R.L., Compilation of Air Pollutant Emission Factors, Public Health Service Publication No. 999-AP-42, 1968.

All calculated emissions are based on these factors.

2. Report of Consultation on the Metropolitan Minneapolis - St. Paul Intrastate Air Quality Control Region, Public Health Service April 1969.

3. Clean Air Act, as amended (42 U.S.C. 1857 - 1857L) Sec 107, Sec 111. November 21, 1967.

4. Executive Order 11507, Prevention, Control, and Abatement of Air and Water Pollution at Federal Facilities, February 4, 1970.

5. Title 42 - Public Health, Chapter I, Subchapter F, Part 76, June 2, 1966.

6. Bureau of the Budget Circular A-78, May 18, 1970.

7. 1970 GSA Listing of Real Property owned by the Federal Government.